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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/622,038	07/17/2003	Takashi Takamura	81754.0096	2258
26021	7590	01/29/2004	EXAMINER	
HOGAN & HARTSON L.L.P. 500 S. GRAND AVENUE SUITE 1900 LOS ANGELES, CA 90071-2611			NGUYEN, DILINH P	
			ART UNIT	PAPER NUMBER
			2814	

DATE MAILED: 01/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/622,038	Applicant(s) TAKAMURA, TAKASHI	
	Examiner DiLinh Nguyen	Art Unit 2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 6-9, 11 and 14-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Omoya et al. (U.S. Pat. 5641996).

Omoya et al. disclose a semiconductor device (figs. 4a-5) comprising:

a package having a plurality of terminals 14;

forming conductive member 4a electrically connecting the terminals to each other; and

disabling the electrical connections by an action of mounting the package on a substrate 20.

- Regarding claim 7, Omoya et al. disclose the step of forming the conductive members comprises forming solder members 4a connecting the terminals 14, and wherein the action mounting the package comprises soldering the terminals (column 11, lines 5-8).
- Regarding claim 8, Omoya et al. disclose the step of forming the conductive members comprises forming solder lines connecting the terminals.
- Regarding claim 9, Omoya et al. disclose the step of forming the conductive members comprises forming a conductive thin film 4a (fig. 4b).

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- Regarding claim 11, Omoya et al. disclose the step of disabling the electrical connections comprises melting the connection by heat (fig. 5).
- Regarding claim 14, Omoya et al. disclose the solder line 4a is formed to a single line like solder member.
- Regarding claim 15, Omoya et al. disclose forming the conductive thin film comprises forming the conductive thin film on the terminals (fig. 4c).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Omoya et al. (U.S. Pat. 5641996) in view of Matsuda et al. (U.S. Pat. 5637535).

Omoya et al. disclose the claimed invention except for not teaching the terminals are pin-shaped having protruding tips and mounting the package comprises inserting the terminals into socket.

Matsuda et al. disclose a semiconductor device comprising: terminals 53a are pin-shaped having protruding tips and mounting the package comprises inserting the terminals into socket 61 (fig. 28, column 14, lines 12-25). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Omoya et al. to provide the reliability electrical connection between

the semiconductor chip and the assembly board and the semiconductor chip can be readily made parallel to the assembly board, as shown by Matsuda et al.

5. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Omoya et al. (U.S. Pat. 5641996) in view of Fujiwara et al. (U.S. Pat. 4735847).

Omoya et al. fail to disclose the conductive film forming by a photolithography process and an etching process.

Fujiwara et al. disclose a method for forming a semiconductor device comprising a step of forming a conductive film comprises patterning the conductive film by a photolithography process and an etching process (column 13, lines 32-38). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Omoya et al. to improve an efficiency and design flexibility for the semiconductor package, as shown by Fujiwara et al.

6. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Omoya et al. (U.S. Pat. 5641996) in view of Kushima et al. (U.S. Pat. 4503597).

Omoya et al. fail to disclose the solder lines are formed to a net-like structure.

Kushima et al. disclose a semiconductor device comprising: solder lines are formed to a net-like structure (cover fig., column 2, lines 48-49). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Omoya et al. to obtain good output characteristic and improve the electrical property for the device, as shown by Kushima et al.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DiLinh Nguyen whose telephone number is (571) 272-1712. The examiner can normally be reached on 8:00AM - 6:00PM (M-F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (571) 272-1705. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

DLN
January 25, 2004

Wael Fahmy
SPE 2814